

## REMARKS

This Response is filed in response to the Office Action mailed October 24, 2006. In the Office Action, the Examiner rejected Claims 28, 31, 34, 36, 38 through 50, 53, and 55 through 59 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,142,434 to Trost et al. in view of JP 11210271A to Sagawa et al.

Claims 29 and 37 are rejected under 35 U.S.C. § 103(a) as unpatentable over the '434 patent in view of JP '271 in further view of U.S. Patent 3,803,570 to Barlow et al.

Claim 30 is rejected under 35 U.S.C. § 103(a) as unpatentable over the '434 patent in view of JP '271 in further view of United Kingdom Patent Application 2,384,223 to Lowson.

Claim 32 and 52 are rejected under 35 U.S.C. § 103(a) as unpatentable over the '434 patent in view of JP '271 in further view of U.S. Published Application No. 2004/0035602 to White.

Claim 33, 35 and 51 are rejected under 35 U.S.C. § 103(a) as unpatentable over the '434 patent in view of JP '271 in further view of U.S. Patent 6,146,576 to Blackmore.

Claim 54 is rejected under 35 U.S.C. § 103(a) as unpatentable over the '434 patent in view of JP '271 in further view of U.S. Patent 6,464,196 to Crookham et al.

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the applicant's disclosure. *In re Vaeck*, 947 F. 2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991)." MPEP §2141.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). 'All words in a claim must be considered in judging the patentability of that claim against

the prior art.' In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." MPEP § 2143.03.

In each rejection of Independent Claims 28, 36, 45, 53, and 57, the Examiner relies on the '434 patent in view of JP '271. However, the Examiner has failed to provide **any** "reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR International Co. v. Teleflex Inc. et al.*, 2007 U.S. LEXIS 4745, \*38 (U.S. 2007). As stated in the attached Declaration of Dr. Jaime De La Ree, "Sagawa '271 discloses nothing to do with utility poles, utility pole cross-arms, or power transmission lines of any kind, or otherwise presents any material of interest in solving the problem addressed by the '740 application." Declaration of Dr. Jaime De La Ree, Paragraph 9.

(1) The '434 patent teaches away from combining JP '271 with the '434 patent

JP '271 teaches passing a beam pipe directly through a post. This is directly opposite to the teaching of the '434 patent. The '434 patent teaches the need to "dissipate the electricity from a lightning strike **away from the center** of the utility pole so as to protect the structural integrity of the utility pole." '434 patent, col. 3, ll. 6-9 (emphasis added). The JP '271 beam pipe would focus a lightning directly into the center of the pole, increasing the likelihood of structural damage that the '434 patent is trying to avoid.

(2) JP '271 fails to teach an insulated coating

JP '271 teaches a decorative coating having a wood grain pattern, not an insulative coating. JP '271 expressly discloses that the coating is so irregular in thickness that it causes problems in assembly. A person skilled in the art would not recognize a highly irregular coating as suitable for insulating a high voltage application. It is common knowledge that isolation is proportional to insulation thickness. A person skilled in the art would recognize that the irregular coating has thin areas and thick areas, rendering an uneven and non-uniform isolation.

In contrast, in the presently claimed subject matter "[t]he incorporation of the coating provides enough resistance (say greater than 10kV/mm) to limit fault currents which may occur by a bird or the like bridging the cross-arm and the aerial connector." Application, pg. 2, ll. 22-26. The coating of the presently claimed subject matter is not the decorative, highly irregular wood grain coating of JP '271.

(3) The presently claimed subject matter is not obvious

Attached herewith is the Declaration of Dr. Jaime De La Ree. "I can state categorically that the information in those two patents does not show that the utility pole described and claimed in the '740 application was obvious to one skilled in the art." Declaration of Dr. Jaime De La Ree, Paragraph 7.

As stated in the Declaration of Dr. Jaime De La Ree, "[o]ver the years, cross-arms for utility poles for use in low to medium voltage electricity distribution and transmission have been made of wood, primarily because of the risk of electrocution to birds and other animals that may encounter the cross-arm of utility poles. Electrocution of birds has been of particular focus because of the risk of causing fires and electrical outages that can result, as well as harm to the birds. Indeed, as noted in the references cited herewith, utility companies have been criminally prosecuted for electrocution of raptors by power lines. *See, Raptor Electrocutions and Distribution Pole Types*, at p. 3. For these reasons, elaborate mechanisms and systems have been designed and used to try to avoid birds sitting on the cross-arms of utility poles used in low to medium voltage electricity distribution and transmission, and to otherwise avoid the birds perching on the cross-arms of utility poles. *See, for example, Suggested Practices for Raptor Protection on Power Lines: the state of the art in 1996.*" Declaration of Dr. Jaime De La Ree, Paragraph 5.

A host of different configurations for utility pole cross arms have been devised and some are now mandated as part of permitting and licensing requirements by most federal agencies in the United States. *See, Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996.* These designs have included ground steel bayonets (e.g., Figure 24 at 60), grounded steel cross arms with exposed jumper wires (e.g., Figure 25 at 61), non-conducting extension links (e.g., Figure 26 at 62), anti-perch guards to discourage perching (e.g., Figures 29 and 30 at 66-67), elevated perches with perch guards (e.g., Figure 23 at 59), insulated wire covers (e.g., Figure 21 at 56), side mounting eliminating the cross-arm (e.g., Figure 31 at 69), providing an insulated pole top or upper perch bar with insulated or covered jumper wires (e.g., Figures 30, 31 and 35 at 67, 69 and 74), raptor-safe compact and suspending designs (e.g., Figures 33 and 34 at 72 and 73), and suspended phase conductors allowing safe perching on pole top and cross-arms (e.g., Figure 37 at 76).

As stated in the Declaration of Dr. Jaime De La Ree, "[i]n view of the history in the art, the cross-arm for a utility pole for use in low to medium voltage electricity distribution and transmission claimed in the Application No. 10/614,740 **was not obvious** in 2002 in view of the art of which I am aware." Declaration of Dr. Jaime De La Ree, Paragraph 6 (emphasis added). If the teachings of those skilled in the art are considered, as they must, it is certain that the presently claimed subject matter was **not** obvious to those skilled in the art. One looking in 2002 for a solution to the problem in utility pole cross-arms that has been a tradition in low to medium voltage power distribution and transmission would not even consider JP '271.

The evidence is overwhelming as to the nature of the problem, and the extent to which the art has gone to try to solve the problem. Moreover, **nowhere** is the elegant solution to the problem provided by the presently claimed invention disclosed or suggested. This is the strongest and most persuasive evidence of the **non-obviousness** of the present invention. As instructed by the Manual of Patent Examining Procedure: "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vick*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." MPEP § 2143 at 2100-125.

The present invention involves a simple concept, but that does not mean that the evidence required to establish *prima facie* obviousness is reduced. In *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000), the Federal Circuit reversed an obviousness rejection involving a technologically simple concept because there was no finding as to the principle or specific understanding within the knowledge of a skilled artisan that would have motivated the skilled artisan to make the claimed invention). *Accord*, MPEP § 2143.01 at 2100-126; *see also*, *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) (The level of skill in the art cannot be relied upon to provide the suggestion to combine references.)

Applicants submit that Independent Claims 28, 36, 46, 53, and 57 are allowable as presented herein. Accordingly, as Dependent Claims 29-35, 37-45, 47-52, 54-56, and 58-59 are dependent on Claims 28, 36, 46, 53, and 57 respectively, the foregoing arguments traverse the rejections of Claims 29-35, 37-45, 47-52, 54-56, and 58-59.

Specifically, as stated in the Declaration of Dr. Jaime De La Ree,

"11. U.S. Patent No. 3,803,570 to Barlow et al. teaches a moisture indicating system having a probe 16 made from metal rod 28 having an insulating sleeve and a pointed metal tip 32 that is pressed into the earth. *Id.* at col.3, ll. 23-30. A dielectric element is positioned between the metal rod 28 and the metal tip 32 to create a capacitor when the probe is in the ground. The probe 16 is insulated so that the dielectric element positioned between the metal rod 28 and the metal tip 32 enables "a series-connected variable capacitor and resistor path to the ground...." I have considered the '570 patent, and the '570 patent does not teach anything related to the problems encountered with cross-arms for a utility pole for use in low to medium voltage electricity distribution and transmission. The '570 patent does not provide any additional information to fill the above described deficiencies of the Trost '434 patent and the Sagawa '271 application in relation to Claims 29 and 37 of the '740 application.

12. U.S. Patent No. 6,146,576 to Blackmore discloses a composite material impregnated with heat curable resin. U.S. Patent No. 6,146,576, col. 1, ll. 11-13. The composite material in the '576 patent may be impregnated with epoxy. I have considered the '576 patent, and the '576 patent does not teach anything related to the problems encountered with cross-arms for a utility pole for use in low to medium voltage electricity distribution and transmission. The '576 patent does not provide any additional information to fill the above described deficiencies of the Trost '434 patent and the Sagawa '271 application in relation to Claims 33, 35, and 51 of the '740 application.

13. U.S. Patent No. 6,464,196 to Crookham et al. discloses a temporary base for a vertically extending structure. U.S. Patent No. 6,464,196, col. 1, ll. 6-9. The base of the '196 patent may support a steel pole. *Id.* at col. 7, ll. 5-6. I have considered the '196 patent, and the '196 patent does not provide any additional information to fill the above described deficiencies of the Trost '434 patent and the Sagawa '271 application in relation to Claim 54 of the '740 application.

14. U.S. Published Application No. 2004/0035602 to White discloses an adjustable aerial terminal. U.S. Published Application No. 2004/0035602, Para. [0003]. The housing of the terminal may be coated with polyurethane to withstand environmental conditions. *Id.* at Para. [0025]. I have considered the '602 application, and the '602 application does not provide any additional information to fill the above described deficiencies of the Trost '434 patent and the Sagawa '271 application in relation to Claims 32 and 52 of the '740 application.

15. UK Patent Application 2,384,223 to Lowson discloses a track for a personal rapid transport system. UK Patent Application 2,384,223, pg. 1, ll. 3-4. The '233 application teaches using a hollow, thin walled rectangular cross section for the track cross members. *Id.* at pg. 4, ll. 17-21. I have considered the '223 application, and the '223 application does not provide any additional information to fill the above described deficiencies of the Trost '434 patent and the Sagawa '271 application in relation to Claim 30 of the '740 application."


Declaration of Dr. Jaime De La Ree, Paragraphs 11-15.

"If one were looking in 2002 for a solution to the problem in utility pole cross-arms that has been a tradition in low to medium voltage power distribution and transmission, one would

not even consider the Sagawa '271 application, alone or in combination with U.S. Patent Nos. 3,803,570 to Barlow et al., 6,146,576 to Blackmore, 6,464,196 to Crookham et al., U.S. Published Application No. 2004/0035602 to White, or UK Patent Application 2,384,223 to Lowson." Declaration of Dr. Jaime De La Ree, Paragraph 16.

In view of the attached Declaration of Jaime De La Ree and the foregoing arguments, Applicants respectfully submit that Claims 28 through 59 are in condition for allowance. Applicants encourage the Examiner to call their counsel, Arland T. Stein, at 614-233-5104 to resolve any additional questions that the Examiner may have to place the claims in condition for allowance.

Respectfully submitted,



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